

REMARKS

In response to the Official Action mailed May 10, 2002, Applicants amend their application and request reconsideration. In this Amendment all examined claims 1-12 are cancelled and new claims 13-16 are presented.

The invention concerns a monolithic microwave integrated circuit (MMIC) that includes, on a single substrate, among other electrical elements, a transistor and a capacitor. In general, the transistor is a field effect transistor that includes, around the transistor and on the substrate of the MMIC, an insulating film. The MMIC also includes a capacitor, specifically a metal-insulator-metal (MIM) capacitor as is well known in MMIC technology. That capacitor includes two metal electrodes separated by a part of the insulating film that is around the transistor. One of the metal electrodes of the capacitor is connected to either an input terminal, i.e., the gate, or the output terminal, the drain, of the transistor. As explained in the patent application, particularly at page 3, the insulating film around the transistor has a substantial effect upon the input and output capacitances of the transistor. As shown at that page, the insulating film increases the input and output capacitances compared to the absence of the insulating film. In other words, the input and output capacitances change directly with the thickness of the insulating film, i.e., a thicker film means a higher input or output capacitance. By contrast, based upon the fundamental physics of capacitors, when the dielectric between two metal plates becomes thinner, the capacitance increases and, vice versa.

While a particular thickness of the insulating film is specified in the design of the MMIC, due to non-uniformities in the fabrication process, the insulating film may vary in thickness between different MMICs made on the same substrate or made at different times. However, in the invention, the variations in electrical characteristics observed due to non-uniformities in fabrication processes are avoided. The variations are compensated by the offsetting changes in input and output capacitance and capacitor capacitance. As the thickness of the film increases, increasing the input capacitance or the output capacitance of the transistor, the capacitance of the MIM capacitor decreases, compensating for the other change in capacitance. This effect and the advantage of the invention is described numerous places in the patent application, the descriptions providing support for the newly submitted claims. For example, see page 8, lines 16-25; page 9, line 24 through page 10, line 2; page 10, lines 18-24; page 12, lines 10-19; and page 12, line 27 through page 13, line 8.

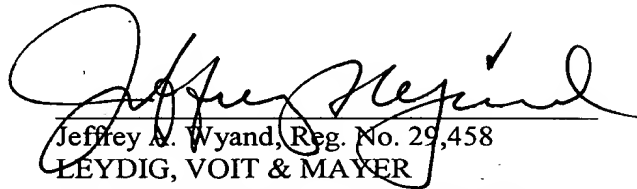
There was no prior art rejection of the examined claims. Rather, the only rejection was made pursuant to 35 U.S.C. 112, first paragraph. Without dwelling upon the propriety of the rejection, it is apparent from the foregoing description and from the patent application

In re Appln. of Ishida et al.
Application No. 09/877,037

considered separately, that the four claims now presented are all enabled by the disclosure of the patent application. Therefore, the rejection should be withdrawn and claims 13-16 should be allowed.

Prompt and favorable Actions is earnestly solicited.

Respectfully submitted,



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